

selected from a predetermined set of classes to which class an associated programme element has been allocated on the basis of programme element content; and

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a user-terminal having a controller for generating a programme by presenting programme elements associated with at least one selected programme classification code, a display device for displaying symbols to the user, the symbols representing the class of associated stored programme elements, and a user input device for operation by the user to select displayed symbols and thereby select at least one classification code, for presentation of programme elements associated with the at least one selected classification code on the display device.

REMARKS

By the present amendment, minor changes are made to the specification to change the title, add section headings and add an abstract. In addition, claims 1-22 are cancelled without prejudice and new claims 23-44 are added therefor. No new matter has been added by those amendments. Claims 23-44 are pending in the application. Re-examination and reconsideration of the application, as amended, are requested.

The title of the application was objected to and a new title has been required. In response, the title of the application is amended herein to recite: "METHOD AND APPARATUS FOR GENERATING A PROGRAMME." It is believed that the new title is in compliance with MPEP 606.01.

The Examiner has suggested an arrangement of the specification, including section headings. In response, the specification is amended herein to add section headings suggested by the Examiner. It is believed that the specification, as amended, complies with the format and arrangement requirements of the MPEP and applicable rules and statutes.

The Examiner has requested an abstract of the disclosure, in accordance with 37 C.F.R. 1.72(b). In response, an abstract is provided herewith on a separate sheet, for inclusion in the application.

Claim 3 has been objected to for having a comma, instead of a period, at the end of the claim. This objection is mooted by the cancellation of claim 3.

Claims 1-20 are rejected under 35 U.S.C. 101 as reciting use, without setting forth any steps involved in the process. This rejection is mooted by the cancellation of claims 1-20. It is respectfully submitted that new claims 23-43 recite methods and apparatus, in compliance with 35 U.S.C. 101.

Claims 1-5, 12-14, 16, 17 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshimura et al. (EP 0705036). Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. Claims 6-11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. in view of Nagasaka et al. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. in view of Heiman. These rejections are moot in view of the cancellation of claims 1-22 without prejudice.

New claims 23-44 are believed to be allowable over the prior art of record. Claim 23 is directed to a method for generating a programme for presentation as a sequence of programme elements from a set of pre-recorded programme elements. The claim recites, among other features, "generating a programme for presentation on a user display device by selecting at least one programme classification code and presenting programme elements associated with said at least one programme classification code." Thus, in the claimed method, a new (or edited) programme is generated by presenting programme elements associate with at least one selected programme classification code.

In contrast, Yoshimura et al describe a program information display system in which a program table (program schedule) is broadcast to and displayed on a user's display screen. A user may select individual pre-set programs or subprograms shown on

the schedule for display or for storing to display at a later time. While Yoshimura et al describe the ability to select individual pre-set programs or program elements, Yoshimura et al do not fairly teach or suggest the generation of a new (or edited) programme from programme elements. Moreover, Yoshimura et al do not fairly teach or suggest the generation of a programme as a sequence of programme elements including programme elements that are associated with a selected classification code. Instead, Yoshimura et al describe displaying pre-set programs or sub-programs individually, without regard to the generation of a new (or edited) programme from programme elements. Accordingly, new claim 23 is believed to be patentably distinct from Yoshimura et al.

New claim 23 is also believed to be patentably distinct from Nagasaka et al. The Nagasaka et al patent describes a video playback system for helping a viewing user remember the contents of past viewing of a program, prior to a point of interruption of the program. Nagasaka et al create a digest of images from the portion of a programme prior to the interruption point in the programme and display the digest before resumption of viewing of the programme. Nagasaka et al provide icons for allowing a user to select a scene (or location) in a programme for resumption of viewing. (Col. 212, ll. 48-55.) However, Nagasaka et al does not disclose or suggest "generating a programme ... by selecting at least one programme classification code," wherein selecting a classification code comprises "displaying user selectable symbols" with "each symbol representing a class of associated programme elements ..." Nagasaka et al's icons do not represent a class of associated programme elements. Instead, Nagasaka et al employ user-selectable icons that represent discrete locations (or scenes) in a programme.

New claim 23 is also believed to be distinguished over the Heiman patent and prior art made of record, but not relied upon by the Examiner. The Heiman patent neither describes nor suggests a method for generating a programme from a set of pre-recorded programme elements. Moreover, Heiman neither describes nor suggests "generating a programme for presentation on a user display device by selecting at least one programme classification code and presenting programme elements associated with said at least one programme classification code." Nor does Heiman describe or suggest "displaying user

selectable symbols" with "each symbol representing a class of associated programme elements ..." Similar comments apply to other prior art of record.

New claims 43 and 44 are believed to be patentably distinguished over the prior art of record for reasons similar to those described above with respect to new claim 23. Claims 43 and 44 are directed to an "apparatus for generating a programme for presentation as a sequence of programme elements from a set of pre-recorded programme elements" (as compared to the "method for generating a programme ..." recited in claim 23). However, inventive features described above with respect to method claim 23 are similarly present in the structural features of the apparatus claims 43 and 44.

Dependent claims 24-42 are also believed to be patentably distinguished over the prior art of record, at least for reasons as described above with respect to parent claim 1. In addition, the dependent claims include features that further distinguish the claims over the prior art of record.

For example, dependent claim 25 recites that "each programme element is classified by reference to a subjective assessment of a value within a range of relative values extending from a low value to a high value." In the first Office Action, the Examiner stated: "As for claim 3, each program element [of Yoshimura et al] is classified by a subjective assessment (i.e., by movie, type of movie, musical, music group members: note Figs. 2-8)." However, Yoshimura et al. does not describe or suggest classifying by reference to *a range of relative values extending from a low value to a high value*, as recited in new claim 25.

Dependent claim 26 recites that the method further comprises "further classifying programme elements by a subjective assessment of value." Thus, in claim 26, the programme elements are classified in two manners. In particular, the programme elements are classified "on the basis of programme element content" (as recited in parent claim 1) and are *further* classified "by a subjective assessment of value". (as recited in dependent claim 26). None of the prior art of record describes or suggests classification of programme elements by content and *further* classification by a subjective assessment of value.

Dependent claims 29-31 recite novel features relating to the presentation of a plurality of program elements simultaneously. Claim 33 recites novel features relating to the transmission of only programme elements associated with a selected sub-set of classes. Claim 35 recites novel features relating to combining transmitted and pre-stored programme elements to generate a programme. Claim 37 recites novel features relating to repeating the presentation on a user display device of at least one transmitted programme element. Claim 38 recites novel features relating to the presentation of associated advertisements with programme elements. Claim 42 recites novel features relating to the receipt of user input corresponding to user-selected classification codes that are above a threshold. It is respectfully submitted that the prior art of record does not disclose or suggest such features.

Applicant believes that the present application is now in condition for allowance. Favorable consideration of the application as amended is respectfully requested.

If, for any reason, the Examiner believes the application is not in condition for allowance, the Examiner is requested to contact the undersigned attorney at the Los Angeles telephone number (310) 975-7963, to discuss any steps that may be needed to place the application in condition for allowance.

Respectfully submitted,

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BACKGROUND

1. Field of the Invention

~~PROGRAMME GENERATION~~METHOD AND APPARATUS FOR
GENERATING A PROGRAMME

The present invention relates to the generation of programmes made up from a series of programme elements each of which is represented by a data packet. Individual programme elements may define for example single images or series of images or audio passages. The programme elements may be distributed in pre-recorded form, or transmitted to a recipient provided with equipment for recording programme elements for subsequent replay.

2. Related Art

Before the advent of recording equipment and in particular video recorders, programmes were produced and distributed via the atmosphere or cable and simply reproduced by recipient's receivers. There was no possibility whatsoever for a recipient to control the received programme over and above turning the receiver on or off.

Video recorders made it possible for a recorded programme to be viewed selectively in that a recording tape could be advanced to a part of the programme of interest which could then be viewed, it not being necessary to view every element of the programme recorded on the tape. Video disc players were then introduced in which individual programme elements were separately indexed such that each programme element could be rapidly accessed as compared with a video tape storage system. There was no fundamental difference however between tape and disc systems in terms of the degree to which a user could interact with the recorded programme in that the user had to know where on the recording medium programme elements of interest were located and thus required knowledge of which programme element was recorded where on the recording medium. Programme elements were recorded on the basis that each programme element was allocated to a particular position on the recording medium, access to any one programme element in essence requiring an index in which programme element identity is related to storage medium position.

Interactive video programmes are now available in which programme elements are stored in the memory of a computer and programmes are produced which in part are dependent upon actions taken by an operator of the computer. (The term

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"memory" is used herein to include solid state, disc, CD and any other form of data storage capable of storing programme elements). For example a computer game may display images to a user which are read out from the computer memory, the user may then take actions appropriate to the displayed image, and depending upon the actions taken by the user the programme content will change. For example the user may "kill" an adversary depicted on the computer monitor's screen, the actions taken by the user to kill the adversary determining the nature of the sequence of images and associated audio output generated by the computer. Thus there is a limited degree of interaction between the user and the programme in that the order of presentation of stored programme elements is dependent upon actions taken by the user, but essentially the user does no more than determine which route is taken through a complex set of alternative routes defined by the computer so as to produce a series of images corresponding to that route. The user has no way of knowing what the next programme element to be displayed will be, unless the user has played the game a sufficient number of times to learn the response of the computer to a particular control input.

Viewers cannot "edit" programmes with current systems. There are often circumstances in which a viewer of a programme knows the kind of elements of a programme which will be of interest and which will not, and yet a viewer cannot make selections of programme elements of interest even from a recorded programme without a detailed index that describes the nature of each programme element which is recorded at a particular position in a recording medium.

There are circumstances in which it would be highly desirable for a user to be able to edit programme content. In many circumstances, particularly in the case of broadcast sports programmes, potential viewers of those programmes are really interested in only relatively small sections of a broadcast sporting event. For example, with live broadcasts, sections of high interest value, for example the scoring of a goal, are often repeated at the expense of not broadcasting passages of play which are relatively uninteresting, for example the period leading up to the game being re-started after the scoring of a goal. The perceived value of a broadcast programme is

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considerably enhanced by such "action replays" but it is frustrating for a viewer not to be able to decide which sections of a game to replay and to be forced simply to accept what is broadcast by the programme producer.

It is often the case that elements of real interest in a sporting event could be delivered over a relatively slow communications channel the bandwidth of which is insufficient to carry a full live broadcast of the event. Thus, bandwidth restraints are a real limitation of broadcast television systems. Furthermore, the resolution available with standard personal computer display screens is far greater than that available with a standard television receiver, and this can be a severe limitation in some circumstances where images of great detail are required to enhance viewer appreciation. The available resolution cannot be used however with broadcast programmes given the limited resolution of the broadcast images. At present, the only way that enhanced quality images can be made available is by the distribution of programme material on disc, and clearly such an approach would not generally be appropriate for ephemeral events such as sports fixtures.

SUMMARY
OF THE
DISCLOSURE

It is an object of the present invention to provide improved methods and apparatus for generating a programme in order to address one or more of the problems outlined above.

According to the present invention there is provided a method for generating a programme for presentation as a sequence of programme elements from a set of pre-recorded programme elements, wherein the programme elements are classified on the basis of programme element content such that each programme element is allocated to at least one of a predetermined set of classes, each programme element is stored with at least one associated programme classification code, each classification code identifying a class to which the associated programme element has been allocated, and a programme is generated by selecting at least one programme classification code and presenting programme elements associated with the said at least one programme classification code.

Programme elements may be classified by reference to a type of event to which the element relates, for example a shot on goal or the scoring of a goal in a

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football match. Alternatively, programme elements may be classified by reference to a subjective assessment of the value of the programme element, for example the level of excitement generated by a particular passage of play in a football match. Thus the classification codes can be used to give information to a user of the system which is not merely defined in terms of the position of a particular event in time but rather to the nature of the event itself.

Programme element selection which is required to generate the programme presented to a user may be controlled automatically by applying predetermined selection criteria, for example by repeating stored programme elements sequentially so as to only present programme elements with a predetermined classification value. Alternatively, programme element selection may be controlled by an operator of a display device connected to the system. For example symbols may be displayed representing the class of each stored programme element, and the operator may select programme elements by selection of associated symbols. Symbols may be displayed in an order corresponding to a temporal order of events represented by the associated programme element.

The operator may select a sub-set of the classes, and symbols corresponding only to programme elements of that sub-set may be displayed. Programmes may be generated comprising a plurality of programme elements which are presented simultaneously, for example in the form of combined video and audio programme elements or combined video and still image programme elements.

The programme elements may be delivered to an end user on a data carrier such as a tape or CD but generally will be transmitted to and stored at a user's receiver with the associated programme classification codes. Programmes are then generated by selection of classification codes at the receiver.

Only programme elements associated with a sub-set of the classes may be transmitted to the receiver, the sub-set being selected by a user of the receiver. Alternatively, only received programme elements corresponding to a sub-set of the classes are stored at the receiver, the sub-set being selected by a user of the receiver. Thus a user can filter out programme elements with a perceived value of less than a

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certain threshold either by transmitting a control signal which prevents programme elements that are not of interest being transmitted to the receiver at all or by discarding received programme elements with a perceived value of less than the threshold.

Received programme elements may be combined with pre-recorded programme elements stored on a data carrier in a memory device of the receiver so as to enhance the perceived value of the generated programme. For example images related to a particular golf course can be combined with images and audio related to live events at that golf course.

Although the invention is applicable in circumstances in which a communications channel used to transmit programme elements has the capacity to carry a continuous live broadcast of for example a sporting event, the invention is applicable in circumstance in which communications channels do not have such a capacity. When using such channels, it will take longer to send a programme element representing a particular event than the time occupied in the generated programme by that programme element. This is not a problem however as programme elements can be repeated such that a continuous programme can be generated.

The invention also provides a method for generating a programme for presentation at a receiver by transmitting a stream of programme element data packets and associated programme generation control data to the receiver, storing the programme element data packets and associated programme generation control data at the receiver, and generating a programme by reading out the programme element data packets in a manner dependent upon the programme generation control data, the programme element data packets being read out such that the duration of at least one programme element in the generated programme is less than the time taken to transmit the data packet of that programme element from the transmitter.

Thus, although in the preferred embodiment of the invention individual programme elements are associated with classification codes selected on the basis of the content of the individual programme elements, classification codes do not have to be generated and instead it is possible simply to transmit control data which enable

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programme elements to be repeated so as to produce a continuous generated programme despite the fact that programme elements are transmitted over a communications channel of limited capacity. Programme generation may be controlled automatically in accordance with a predetermined routine or by a user of the receiver to whom the control data is displayed so as to enable programme element selection.

BRIEF DESCRIPTION
OF THE DRAWINGS

→ Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings in which;

Figure 1 is a schematic representation of the overall structure of a system in accordance with the present invention;

Figure 2 is a schematic representation of equipment provided at each receiver of the system of figure 1;

Figures 3 and 4 schematically represent the generation of programme element data packets and associated classification codes and the storage of received programme element data packets and associated codes at a receiver;

Figure 5 is a schematic representation of the addition of classification codes to television signals produced at a programme source;

Figure 6 is a schematic representation of the storage and use of programme element data packets and associated classification codes at a receiver;

Figure 7 is a view of a display screen showing Figure 6 to a larger scale;

Figure 8 is a schematic representation of symbols displayed on the screen of Figure 7 to represent the progress of a sporting event; and

Figure 9 is a schematic representation of a display screen in a form suitable for the generation of a programme including simultaneously reproduced programme elements.

DETAILED
DESCRIPTION
OF PREFERRED
EMBODIMENTS
OF THE
INVENTION

→ Referring to Figure 1, terminals 1 which may be conventional PC's (Personal Computers) are connected via conventional modems 2 and telephone lines 3 to a conventional telephone exchange 4. The telephone exchange receives either via existing telephone links or via a direct connection 5 programme element data packets and programme generation control data from a programme source 6. Conventional

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